

Application No. 09/381,032

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Amendments to the Claims:

The following claims will replace all prior versions of the claims in this application (in the unlikely event that no claims follow herein, the previously pending claims will remain):

1-22. (Cancelled).

23. (Currently amended) A method for the determination of TSH receptor autoantibodies comprising:

- (i) reacting a solid phase, comprising an affinity-purified immobilized recombinant human TSH receptor, with a liquid biological sample to be assayed for the presence of said autoantibodies;
- (ii) separating a reacted solid phase from the liquid biological sample;
- (iii) washing the reacted solid phase;
- (iv) incubating the reacted solid phase with a buffer solution comprising an amount of labeled bovine TSH for a sufficient time to occupy all the TSH binding sites of the recombinant human TSH receptor not occupied by the autoantibodies; and
- (v) determining the presence and/or amount of the autoantibodies on the basis of the amount of labeled bovine TSH bound to the solid phase; wherein the recombinant human TSH receptor is immobilized to a solid support by a selective monoclonal antibody that recognizes only conformational epitopes of the human TSH receptor and is obtained by immunizing an animal with a DNA plasmid construct encoding against the human TSH receptor and washed.

24. (Currently amended) A method for the determination of TSH receptor autoantibodies comprising:

- (i) reacting a solid phase comprising an affinity-purified immobilized recombinant human TSH receptor with a solution prepared from:
 - a) a serum-containing biological sample to be assayed for the presence of said autoantibodies, and

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b) a buffer solution containing an amount of labeled bovine TSH for a sufficient time to occupy all the TSH binding sites of the recombinant human TSH receptor not occupied by the autoantibodies;

(ii) separating the solution from a reacted solid phase;

(iii) washing the reacted solid phase; and

(iv) determining the presence and/or amount of the autoantibodies on the basis of the amount of labeled bovine TSH bound to the solid phase;
wherein the recombinant human TSH receptor is immobilized to the solid support by a selective monoclonal antibody that recognizes only conformational epitopes of the human TSH receptor and is obtained by immunizing an animal with a DNA plasmid construct encoding against the human TSH receptor and washed.

25. (Previously presented) The method according to either claim 23 or claim 24, wherein the solid phase is formed by the walls of test tubes, which are pre-coated with an animal-specific antibody for binding the selective antibody against the human TSH receptor.

26. (Cancelled).

27. (Previously presented) The method according to either claim 23 or claim 24, carried out in an automated form, wherein the solid phase comprises suspended particles that are coated with a selective antibody against the human TSH receptor, and wherein by adding the recombinant human TSH receptor and the sample a solution containing the suspended solid particles and the receptor is temporarily formed.

28. (Previously presented) The method according to claim 23, wherein the labeled bovine TSH is added in a serum-free buffer solution.

29. (Previously presented) The method according to either claim 23 or claim 24, wherein step (i) is carried out in the presence of at least one antibody against human TSH that does not cross-react with bovine TSH.

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30. (Previously presented) The method according to either claim 23 or claim 24, wherein the autoantibodies are receptor-stimulating autoantibodies, whose occurrence in a human serum is characteristic of Graves' disease.
31. (Previously presented) The method according to either claim 23 or claim 24, wherein the affinity-purified immobilized recombinant human TSH receptor is in the presence of a buffer.
32. (Previously presented) The method according to either claim 23 or claim 24, wherein said sample is diluted with a buffer.
33. (New) A method for the determination of TSH receptor autoantibodies comprising:
 - (i) reacting a solid phase, comprising an affinity-purified immobilized recombinant human TSH receptor, with a liquid biological sample to be assayed for the presence of said autoantibodies;
 - (ii) separating a reacted solid phase from the liquid biological sample;
 - (iii) washing the reacted solid phase;
 - (iv) incubating the reacted solid phase with a buffer solution comprising an amount of labeled bovine TSH for a sufficient time to occupy all the TSH binding sites of the recombinant human TSH receptor not occupied by the autoantibodies; and
 - (v) determining the presence and/or amount of the autoantibodies on the basis of the amount of labeled bovine TSH bound to the solid phase;

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wherein the recombinant human TSH receptor is immobilized to a solid support by a selective monoclonal antibody that:

- a) recognizes only conformational epitopes of the human TSH receptor and is obtained by immunizing an animal with a DNA plasmid construct encoding the human TSH receptor; and
- b) does not bind to peptides representing short sequences of the human TSH receptor, but which shows strong binding to the complete recombinant human TSH receptor;

and then washed.

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